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WORK PLAN FOR ENVIRONMENTAL RESPONSE ACTIVITIES

KENNEDY AVENUE SEWER REPLACEMENT EAST CHICAGO, INDIANA

Prepared For:

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REVISED WORK PLAN FOR ENVIRONMENTAL RESPONSE ACTIVITIES
4800 KENNEDY AVENUE SEWER REPLACEMENT
EAST CHICAGO, INDIANA

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1.0 INTRODUCTION

The City of East Chicago is submitting this Work Plan to present a Scope of Work for the implementation of Environmental Response Action that includes site characterization activities and possible remedial action at a site located within the 4800 block of Kennedy Avenue in East Chicago, Indiana (Site). This Work Plan is being submitted to the United States Environmental Protection Agency (USEPA) for approval of proposed field activities at the Site.

Field activities will be conducted in accordance with applicable United States Environmental Protection Agency (USEPA) requirements, regulations, guidance, and technical standards. The quality assurance procedures for sample collection and analysis are included within a Quality Assurance Project Plan (QAPP) attached as **Appendix A**. Applicable staff working on this project will also have appropriate health and safety training as specified in OSHA, 29 CFR 1910.120. The health and safety requirements applicable to this project are included in a Health and Safety Plan (HASP) attached as **Appendix B**. The Scope of Work will be conducted upon USEPA approval of this Work Plan in accordance with the schedule presented herein.

1.1. Background

The City of East Chicago, Indiana (the City) is located along the south shore of Lake Michigan in Northwest Indiana and is part of the greater Chicago metropolitan area. The city has a total area of 15.6 square miles. On April 8, 2009 the USEPA placed an area of the City on the National Priorities List (NPL). The area is comprised of approximately 240 acres and is bounded by Chicago Ave. on the north, Parish Ave. on the east, 149th and 151st St. on the south, and Aster Ave. on the west. The USEPA Region 5 Superfund Program began the remedial investigation of the site on June 26, 2009. USEPA must perform a remedial investigation (RI) and feasibility study (FS) before a Record of Decision (ROD) can be issued. The ROD will specify the actual remediation that will be undertaken at the Superfund site. Given the size and regulatory nature of a Superfund RI-FS, this process is anticipated to last a minimum of one to two years.

The City of East Chicago is planning to implement infrastructure sewer pipe replacement work on part of Kennedy Avenue that is located within the area designated as a Superfund site. A small portion of the road and underlying shallow fill material has collapsed into the sewer pipe. USEPA has indicated that it is willing to let the City proceed with these activities provided the City funds these efforts, follows proper USEPA protocols, and the USEPA approves this Work Plan.

Representatives from Weaver Boos, the City of East Chicago, and USEPA convened a conference call meeting on September 2, 2011 to discuss possible field activities to be conducted in support of these efforts. In general, the meeting addressed lead characterization of the shallow fill material, possible profiling and remediation of the shallow fill material, and preparation of a Health and Safety Plan (HASP). As a result, the following proposed Work Plan has been developed in consultation with the USEPA representative.

1.2. Facility Description

The project area includes a small portion of the approximate center of Kennedy Avenue (see **Figure 1** for the approximate location of the project area). Kennedy Avenue is a major collector street within the City of East Chicago. The location of the project area is bordered on both sides by residential areas. The street surface is asphalt laid over concrete.

1.3. Project Overview

The proposed activities were developed to assess suspected lead impacts in the shallow fill material that may be related to the Superfund site. Based on the September 2, 2011 conference call meeting with the USEPA and other work completed within the Superfund area, lead impacts are assumed to be limited to the upper 1-3 feet of fill material. The work would generally include the excavation of the shallow fill material overlying the sewer pipe to facilitate the replacement of the sewer pipe and nearby manhole. Prior to implementation of these activities, the shallow fill material will be evaluated to determine if it can be reused onsite as backfill or designated for offsite disposal.

The evaluation effort will include separating the shallow fill material from the underlying native sand during the excavation activities. Samples from the shallow fill material will be collected for field screening in order to characterize the concentration of lead. Field screening will be conducted by the USEPA's contractor Sullivan International Group (Sullivan). Based on the field screening results, samples of the fill material may be also collected for laboratory analysis. Based on the results of the field screening and/or laboratory analysis the shallow fill material will be returned to the excavation as fill material or removed for offsite disposal as non-hazardous or hazardous waste. Based on the September 2, 2011 conference call meeting with the USEPA and other work completed within the Superfund area, native soil excavated below the shallow fill material is assumed to meet the applicable lead soil screening level for reuse within the excavation.

Since the excavation will extend below shallow fill material, no confirmation samples from the sidewall or floor of the excavation will be collected from the native soils. Weaver Boos will prepare a report summarizing the completed activities. The report will demonstrate that remediation activities, if necessary have been conducted in accordance with this USEPA approved Work Plan.

The Work Plan has been subdivided into the following components:

- Lead Characterization;
- Waste Disposal Profiling Activities, if necessary;
- Remediation Activities, if necessary; and,
- Schedule of Activities.

The following provides a summary of the activities proposed for implementation to address the shallow soil that will be excavated in support of the infrastructure work on Kennedy Avenue.

2.0 LEAD CHARACTERIZATION

Lead characterization, outlined below, will be conducted because the Site is located within the USEPA designated Superfund Site area. The data gathered during this effort will be used to assess the need for remediation, if necessary. The lead characterization activities will be conducted by the USEPA's contractor Sullivan, Inc. The following includes the proposed methodology for assessing the shallow fill material at the project area.

2.1. Lead Characterization Activities

Soil sample collection for lead characterization will be conducted in accordance with applicable USEPA requirements, regulations, guidance, and technical standards. In general, samples will be collected by Sullivan from the excavated shallow fill material for field screening in order to characterize the lead concentrations in the shallow fill material. Samples will be collected from each side of the existing manhole over the approximate center of the sewer pipe (see **Figure 1** for approximate sample locations). Sullivan will field screen the shallow fill material samples using an X-ray fluorescence (XRF) spectrometer.

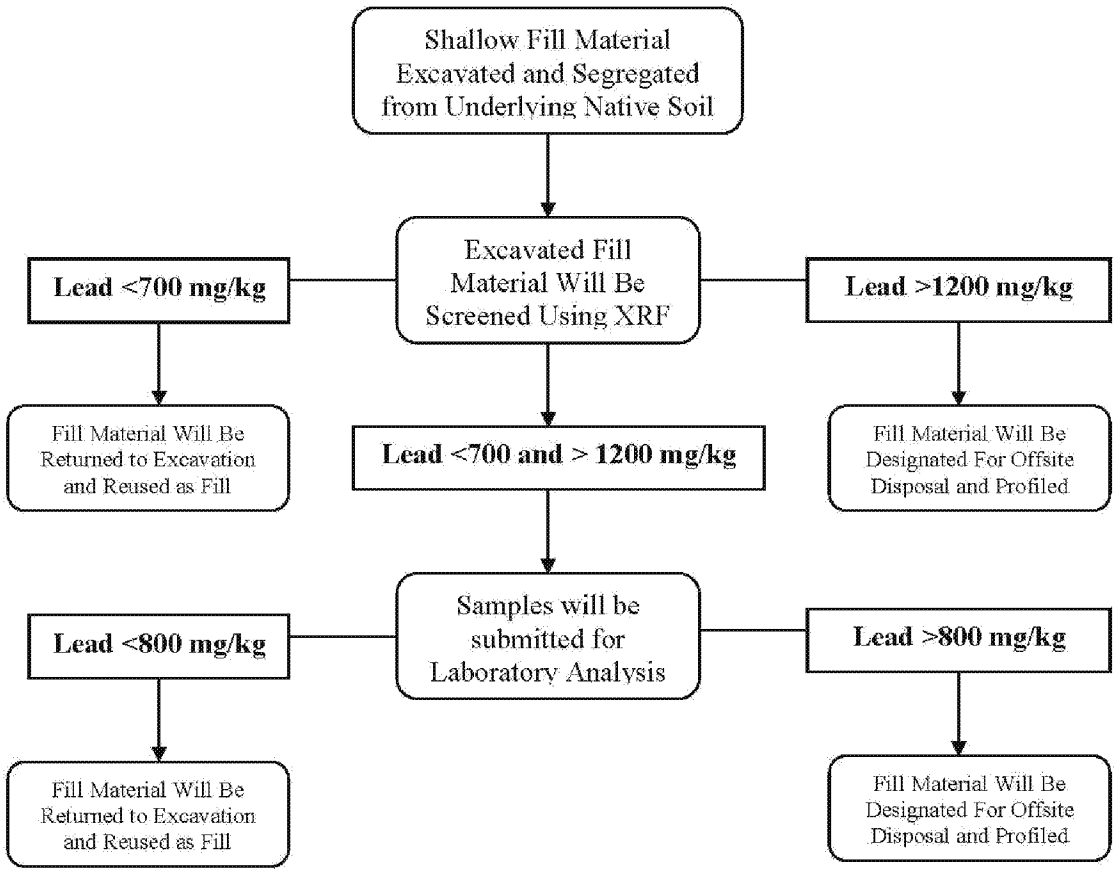
If the field screening characterization results exceed 700 mg/kg, then Sullivan will submit the samples for laboratory analysis with a 24 hour turn around time to confirm the field screening sample results. Should the samples exhibit field screening results in excess of 1200 mg/kg, then the shallow fill material will be designated for offsite disposal. For the laboratory analysis effort, the sampling equipment, sampling methodology, decontamination, custody procedures, and analytical procedures for analysis of lead to be implemented during the lead characterization sampling activities are described in the Quality Assurance Project Plan (QAPP) included in **Appendix A**.

Analytical lead results will be compared to the latest available version of USEPA's "Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites", found at: http://www.epa.gov/region9/superfund/prg/. The sewer replacement work will be conducted on Kennedy Avenue, which is a public roadway and not considered a residential property. Based on the site location, the field screening and analytical results will be compared to the applicable USEPA industrial soil screening level for lead of 800 mg/kg. Kennedy Avenue will be used as a public roadway for the foreseeable future.

If the lead sample analytical results are below this USEPA industrial soil screening level, it will be assumed that the shallow fill material will not need offsite disposal and can be reused in the

excavation as backfill. If the lead sample analytical results exceed this USEPA industrial soil screening level, then the shallow fill material will be designated for offsite disposal. The following flow chart summarizes the above criteria that will be used to characterize the fill material:

Flow Chart
Kennedy Avenue Sewer Replacement
East Chicago, Indiana



If necessary based on the above, waste profiling and offsite disposal activities will be conducted as described in the next section.

3.0 WASTE PROFILING ACTIVITIES

3.1. Waste Profiling Activities

If necessary, based on the results of the lead characterization activities, waste profiling activities will be conducted by the City of East Chicago for the shallow fill material anticipated for excavation. Sullivan will collect one composite sample from shallow fill material during the lead characterization activities in the event waste profiling is necessary. Results will be submitted to the Weaver Boos for waste profiling with the appropriate disposal facility. During the profiling process, excavated fill material will be placed on plastic sheets and covered with plastic sheets during the profiling process. Upon profiling, it will be loaded onto haul trucks for the appropriate offsite disposal.

The sample will be submitted for laboratory analysis of various parameters as required by the disposal facility. Depending upon input from the disposal facility we may be able to modify the analytical parameters. However, at this time, it is assumed that the analysis required will be total lead, the Toxicity Characteristic Leaching Procedure (TCLP) testing for the eight RCRA metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), flashpoint, paint filter, total phenol, reactive sulfide, reactive cyanide, and pH.

Results will be used to assess the disposal profile. If the sample results are below hazardous waste standards, then the soil, if necessary, will be managed as non-hazardous waste. If the sample results are above hazardous waste standards (for lead), then the soil, if necessary, will be managed as hazardous waste. Upon receipt of analytical data, Weaver Boos will prepare the waste profile forms in support of securing approval for offsite disposal at an appropriate facility.

The sampling equipment, methodology, decontamination, custody procedures, and analytical procedures to be implemented during the waste profile sampling are described in the QA Project Plan included in **Appendix A**.

4.0 REMEDIATION ACTIVITIES

Remediation will only be conducted if the lead results of the shallow fill material obtained during the characterization activities exceed the applicable USEPA soil screening levels as outlined above in **Section 2.0**. If necessary, remediation technologies will include use of a backhoe, haul trucks, and utility tools for excavation, transportation and offsite disposal. The following is a discussion concerning the feasibility and performance of this technology proposed for remedial action implementation.

4.1. Scope of Work

The scope and extent of the remedial action, if necessary will include the excavation and offsite disposal of the top one to three feet of shallow soil overlying approximately 28 feet of the sewer pipe (i.e., see **Figure 1** for the approximate extent of the sewer replacement work). In addition, the shallow soil that has collapsed within the sewer pipe will be removed for offsite disposal. Native sands underlying the shallow fill material excavated to facilitate access to the sewer pipe will be reused as backfill in the excavation. Based on the area of this excavation, approximately 35 in place cubic yards of shallow fill material would be excavated for offsite disposal.

4.2. Soil Excavation/Disposal

At this time, it is expected that the shallow fill material will be transported and disposed as non-hazardous waste at the CID Daramend Recycling & Disposal Facility located in Chicago, Illinois. However, if the fill material exhibits characteristics of hazardous waste, measures may be undertaken in the field to stabilize material for purposes of rendering the material non-hazardous by reducing leachable metal concentrations to below the TCLP regulatory lead concentration of 5.0 mg/L.

Excavation and disposal activities will proceed in the following general manner for non-hazardous fill material:

1) Prior to excavation, access points will be assessed based on entry and exit feasibility of equipment and truck traffic.

2) One backhoe will be used for the removal and loading efforts.

3) The shallow fill material present at approximately one to three feet below ground surface will be separated from the native underlying sand and stockpiled on site pending completing of waste profiling activities.

4) Stockpiled fill material will be placed on plastic sheets and covered with plastic sheets.

5) Upon profiling, impacted shallow fill material will be loaded onto appropriately sized hauling trucks permitted to transport material as either non-hazardous or hazardous waste.

If the shallow fill material is profiled as hazardous, since it's a small volume of material, it will be transported offsite as hazardous waste to Envirite in Harvey, Illinois for stabilization and subsequent Subtitle D disposal.

4.3. Confirmation Sampling Activities

No confirmation samples will not be collected from the underlying native sands exposed during the excavation. As discussed with the USEPA, based on historic data from the Superfund area, it is assumed that the underlying native sands are not anticipated to be impacted with lead in excess of the applicable USEPA soil screening levels.

4.4. Backfilling Activities

If impacted shallow fill materials are removed for offsite disposal, then clean fill will be used to backfill the excavation after the sewer pipe is replaced. Imported virgin material will be used as backfill.

4.5. Report Preparation

Weaver Boos will prepare a Completion Report summarizing the completed activities. The Completion Report will include the information acquired during the field activities and will append significant documents (i.e., site plans, tables, laboratory data, etc.). The Completion Report will demonstrate that remediation activities have been conducted in accordance with this Work Plan. The Completion Report will be submitted to the USEPA and IDEM.

5.0 SCHEDULE OF ACTIVITIES

Soil characterization activities will be conducted within approximately one week upon USEPA approval of this Work Plan. Samples will be submitted for standard laboratory turnaround time of approximately 7-10 business days. If remediation is necessary based on the analytical results, this work will be initiated approximately two to four weeks upon receipt of the aforementioned results.

Based on the assumed volume of fill material, it is believed the excavation, loading, and transportation activities will be completed in approximately five business days. Upon completion of replacement activities, the excavation will be backfilled with clean imported fill material. The Completion Report will be submitted for review by the City of East Chicago and USEPA approximately three to four weeks after completion of field activities.

FIGURES

APPENDIX A

QUALITY ASSURANCE PROJECT PLAN

APPENDIX B

HEALTH AND SAFETY PLAN